

Listing of Claims:

Claim 1 (Previously Presented) A method of delivering packets over a link comprising the steps of:

transmitting at least one packet over said link via a first layer of a protocol stack employed by said link;

determining, prior to transmitting further packets, whether transmission of said at least one packet failed;

repeating said transmitting and determining steps until said transmitting step is determined to have failed;

determining, responsive to said transmitting step failing, a quality of said link at an electronic device by examining quality-of-service (QoS) information available within a second layer of said protocol stack; said second layer being a different layer in said protocol stack than said first layer;

developing a retry strategy for said transmitting step based on said determined quality; and,

retransmitting said at least one packet according to said retry strategy.

Claim 2 (Previously Presented) The method of claim 1 comprising the steps of:

resuming said method at said transmitting step using said retry strategy if said re-transmitting step succeeds; and,

terminating said method if said re-transmitting step fails.

Claim 3 (Original) The method of claim 1 wherein said first layer is layer four of the OSI model and said second layer is layer two of the OSI model.

Claim 4 (Previously Presented) The method of claim 1 further comprising the step of:

determining a second quality of a second link from said electronic device by examining a third layer of a second protocol stack used to implement said

second link that is different from a fourth layer of said second protocol stack that is used to deliver said packets.

Claim 5 (Original) The method of claim 4 wherein at least one of said first quality and second quality is based on at least one of the measurements of reachability and availability of a given service used for delivery of said packets.

Claim 6 (Previously Presented) The method of claim 5 wherein said service includes Voice over IP.

Claim 7 (Original) The method of claim 4 further comprising the step of delivering said packets over the one of said two links based on a determination of which link has a more desirable quality.

Claim 8 (Original) The method of claim 7 wherein said determination is based, at least in part, on which link has the least financial cost for carrying said packets.

Claim 9 (Original) The method of claim 7 wherein said determination is based, at least in part, on whether a change from one of said links to the other of said links will be transparent to the performance of a given service being used for delivery of said packets.

Claim 10 (Previously Presented) An electronic device operable to communicate with at least one node via a link comprising:

- a transmitter configured to transmit at least one packet over said link via a first layer of a protocol stack used to implement said link;

- a computing processor connected to said transmitter configured to determine, prior to causing said transmitter to transmit further packets, whether transmission of said at least one packet failed; said computing processor further

configured to cause said transmitter to repeat said transmission until said transmission is determined to have failed; said computing processor further configured to determine, responsive to said transmitter failing to effect said transmission, a quality of said link by examining quality of service (QoS) information available over a second layer of said protocol stack; said second layer being a different layer in said protocol stack than said first layer that is used to deliver said packets; said computing processor further configured to develop a retry strategy for transmitting based on said determined quality.

Claim 11 (Previously Presented) The device of claim 10 wherein said device is further operable to resume transmission of said packets according to said retry strategy if transmission of said at least one of said packets success and further operable to terminate transmission of packets if retransmission of said at least one of said packets fails.

Claim 12 (Original) The device of claim 10 wherein said first layer is layer four of the OSI model and said second layer is layer two of the OSI model.

Claim 13 (Previously Presented) The device of claim 10 wherein said device is further operable to determine a quality of a second link between said electronic device and a second node by examining a third layer of a second protocol stack used to implement said second link that is different from a fourth layer of said second protocol stack that is used to deliver said packets.

Claim 14 (Original) The device of claim 13 wherein said device is further operable to deliver said packets over the one of said two links based on a determination of which link has a more desirable quality.

Claim 15 (Original) The device of claim 14 wherein said determination is based, at least in part, on which link has the least financial cost for carrying said packets.

Claim 16 (Previously Presented) A computer-readable storage medium containing a set of instructions executable by a processor to control an electronic device, comprising the steps of:

- transmitting at least one packet over said link via a first layer of a protocol stack employed by said link;

- determining, prior to transmitting further packets, whether transmission of said at least one packet failed;

- repeating said transmitting and determining steps until said transmitting step is determined to have failed;

- determining, responsive to said transmitting step failing, a quality of said link at said electronic device by examining quality-of-service (QoS) information available within a second layer of said protocol stack; said second layer being a different layer in said protocol stack than said first layer;

- developing a retry strategy for said transmitting step based on said determined quality; and,

- retransmitting said at least one packet according to said retry strategy.

Claim 17 (Previously Presented) The method of claim 1 wherein said second layer is lower in said protocol stack than said first layer.

Claim 18 (Previously Presented) The method of claim 1 wherein said packets are Transport Control Protocol (TCP) packets.

Claim 19 (Previously Presented) The method of claim 1, wherein said link is a wireless link.

Claim 20 (Previously Presented) The method of claim 19, wherein said packets are transmitted over said wireless link employing the General Packet Radio Service (GPRS) wireless packet data transmission standard.

Claim 21 (Previously Presented) The method of claim 1, wherein said transmitting step fails when said device fails to receive a "not acknowledge" signal.

Claim 22 (Previously Presented) The method of claim 18, wherein said transmitting step fails when said device does not receive a response to an information request transmitted within said TCP packet.

Claim 23 (Previously Presented) The method of claim 1 wherein the service used for delivery of said packets comprises a traditional PSTN type of telephone call, through the use of appropriate PSTN gateways.

Claim 24 (Previously Presented) The method of claim 1 wherein said determined quality is a transmission profile.

Claim 25 (Previously Presented) The method of claim 24, wherein said transmission profile is a record of successful transmissions from said device or of signal strengths for a previous time period.

Claim 26 (Previously Presented) The method of claim 25, wherein said previous time period is 10 seconds.

Claim 27 (Previously Presented) The method of claim 1, comprising delivering packets over at least one of two links connected to the electronic device,¹ comprising the steps of:

determining a quality of all of said links by examining QoS information inherently available over the second layer of said protocol stack, said second layer being employed by all of said links;

developing a retry strategy for each of said links for use in transmitting said packets based on said determined qualities,

selecting one of said links based on which of said retry strategies results in a desired successful transmission;

re-transmitting said at least one packet according to said retry strategy of said selected one of said links;

resuming said method at said transmitting step over said selected one of said links using said retry strategy if said re-transmitting step succeeds; and

terminating said method if said re-transmitting steps fails.

Claim 28 (Previously Presented) The device of claim 10 wherein said packets are Transport Control Protocol (TCP) packets.

Claim 29 (Previously Presented) The device of claim 10 wherein said link is a wireless link.

Claim 30 (Previously Presented) The device of claim 29, wherein said packets are transmitted over said wireless link employing the General Packet Radio Service (GPRS) wireless packet data transmission standard.

Claim 31 (Previously Presented) The device of claim 28 wherein said transmitter identifies a packet transmission failure when said device fails to receive a "not acknowledge" signal.

Claim 32 (Previously Presented) The device of claim 28 wherein said transmitter identifies a packet transmission failure when said device does not receive a response to an information request transmitted within said TCP packet.

Claim 33 (Previously Presented) The device of claim 28 wherein the service used for delivery of said packets comprises a traditional PSTN type of telephone call, through the use of PSTN gateways.

Claim 34 (Previously Presented) The device of claim 28 wherein said computer processor develops said retry strategy based on the determined quality of the link in order to develop the strategy as a transmission profile.

Claim 35 (Previously Presented) The device of claim 34, wherein said transmission profile is a record of successful transmissions from said device or of signal strengths for a previous time period.

Claim 36 (Previously Presented) The device of claim 35 wherein said previous time period is 10 seconds.

Claim 37 (Previously Presented) The device of claim 36 wherein said computer processor is configured to develop said retry strategy as a mirror of said transmission profile.

Claim 38 (Previously Presented) The device of claim 37 wherein said transmitter is configured to deliver packets over at least one of two links from said electronic device and said computer processor is further configured to determining a quality of all of said links by examining QoS information inherently available over the second layer of said protocol stack, said second layer being employed by all of said links;

said computer processor further configured to develop a retry strategy for each of said links for use in transmitting said packets based on said determined qualities; said computer processor further configured to select one of said links based on which of said retry strategies results in a desired successful transmission;

said transmitter configured to re-transmit said at least one packet according to said retry strategy of said selected one of said links;

said computer processor and said transmitter configured to resume said transmitting over said selected one of said links using said retry strategy if said re-transmitting succeeds; and

said computer processor and said transmitter further configured to terminate transmitting if said retransmitting fails.

Claim 39 (Previously Presented) The method of claim 1 wherein developing a retry strategy comprises determining whether a signal strength has increased by a predetermined amount.

Claim 40 (Previously Presented) The method of claim 25, wherein developing said retry strategy comprises identifying portions of said previous time period during which successful transmissions are recorded in said transmission profile.

Claim 41 (Previously Presented) The method of claim 40, wherein said retry strategy comprises retransmitting said at least one packet during portions of a subsequent time period corresponding to said identified portions.

Claim 42 (Previously Presented) The electronic device of claim 10, said computing processor further configured to develop said retry strategy by determining whether a signal strength has increased by a predetermined amount.

Claim 43 (Previously Presented) The electronic device of claim 10, said computing processor further configured to develop said retry strategy by identifying portions of said previous time period during which successful transmissions are recorded in said transmission profile.

Claim 44 (Previously Presented) The electronic device of claim 43, wherein said retry strategy comprises retransmitting said at least one packet during portions of a subsequent time period corresponding to said identified portions.